

Silverbell Landfill **(formerly known as Silverbell Jail Annex Landfill)**

Boundaries:

The site is located in west Tucson, and is bounded approximately by Sweetwater Drive on the north, Interstate 10 on the east, Grant Road/Ironwood Hill Drive on the south, and Silverbell Road on the west.

Site History:

- Silverbell Landfill is made up of two landfill cells, approximately 40 acres in total size, which received wastes between 1966 and 1977. Neither cell accepted hazardous waste, although landfill access was not strictly controlled. The South Cell has been covered with soil and the North Cell underlies a portion of the Silverbell Golf Course.
- In Fall 1983, groundwater contamination was discovered at the Tratel Mobile Home Park production well located east of the site.
- In 1983, the City of Tucson (the City) began conducting subsurface investigations, and ADEQ began conducting groundwater investigations in 1985. Volatile organic compounds (VOCs) were identified in the groundwater at concentrations exceeding aquifer water quality standards.
- In June 1995, the City completed an interim final remedial action plan (RAP). The approved RAP proposed a pump and treat system and treatment by air stripping utilizing a carbon filter. Treated water would be reinjected into the aquifer and/or reused at Silverbell Golf Course. Although this groundwater remedy was not developed, the City evaluated several groundwater remedial pilot projects and installed an air injection/soil vapor extraction system (AI/SVE).
- From 1960 to 1978, the University of Arizona operated a solid waste and debris landfill in the area east of the Santa Cruz River, south of Fort Lowell Road. In June 1995, ADEQ closed the West Campus Agricultural Center site. Data and information collected and available as of June 1995 did not show that this site was a source of tetrachloroethene (PCE) and trichloroethene (TCE) contamination in the groundwater.
- From 1996 to 1998, ADEQ approved the City's request to conduct a pilot study to evaluate the effectiveness of a recirculation well to replace or enhance the approved pump and treat remedy. In January 1999, the City replaced the well with a GZB Circulation Well Pilot System. Due to hard water and scaling problems, both circulation well pilots were unsuccessful.
- The site was placed on the WQARF Registry in April 1999 with an eligibility and evaluation (E&E) score of 51 out of a possible 120.

Site Status:

- From October 1999 to September 2005, the City operated a soil vapor extraction (SVE) system to mitigate the source. This system removed a total of 2,061 pounds of VOCs. The system has

remained off since the contaminant concentrations have not shown rebound, but has operated occasionally to control methane migration.

- The City is also evaluating a groundwater remedy consisting of monitored natural attenuation with enhanced bioremediation for the source areas. A pilot test using sodium benzoate to stimulate indigenous microbes began June 25, 2003. Depending on various factors such as groundwater flow and degradation of contaminants, the pilot test was expected to last up to two years for results. In July 2005, the City expanded the pilot by constructing an automatic mixing and delivery system to the north cell area, and changed the added nutrient to sodium lactate.
- The City's Environmental Services is working with Tucson Water to develop a conceptual model which will provide support for the development of an analytical groundwater model. The project objectives are: to evaluate the migration and fate of VOCs and develop predictions of potential impacts at the Sweetwater Recharge facility, to determine if hydraulic containment for the plume is necessary, and to design and implement a remedy focused on higher contaminated plume sources areas. The conceptual model is expected to be completed in December 2005.
- On July 30, 2003, a pipeline operated by Kinder Morgan Energy Partners (KMEP) broke resulting in the release of gasoline to an area near the WQARF site. Cleanup of the gasoline contamination is not being conducted under WQARF, the proximity of the gasoline contamination to the existing PCE and TCE plume emanating from the Silverbell Landfill is being monitored. As of September 2005, Kinder Morgan has extracted a total of 46,712 gallons of gasoline from the groundwater and expects to have a SVE system operational by February 2006.
- Kinder Morgan identified the presence of VOCs in the soil vapors within the Silver Creek subdivisions. ADEQ believes these soil vapors are unrelated to the gasoline pipeline rupture. ADEQ conducted additional soil vapor testing early October 2004 to confirm and expand upon the Kinder Morgan data. With that data, the Arizona Department of Health Services (ADHS) conducted a Health Consultation to evaluate whether soil vapors from VOCs in the subsurface at the Silver Creek Subdivision posed any health effects to residents. The report, released in June 2005, concluded that the observed concentrations of compounds in soil vapors pose no apparent public health hazard.

Site Hydrogeology:

- The site is located within the Tucson Basin. The basin is a broad, northwest sloping alluvial valley surrounded by mountain ranges and can be divided into four geologic units: the Pantano Formation, Tinaja Beds, Fort Lowell Formation, and recent alluvial deposits.
- The Santa Cruz River is an ephemeral stream that flows as a result of seasonal storm events and runs adjacent to the landfill cells.
- The Sweetwater Recharge Facility is located directly downgradient of the site. The effluent recharge basins and extraction wells appear to have a hydraulic impact on the groundwater contaminant plume.

- The regional aquifer is encountered approximately 145 feet below ground surface (bgs). Flow direction in the aquifer is generally to the northwest.

Contaminants:

The current contaminants of concern in groundwater include PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride. Contaminants of concern at the site may change as new data becomes available.

Public Health Impact:

In November 1993, the Arizona Department of Health Services completed the draft Baseline Human Health Risk Assessment. Even though no significant health risks were identified, the Risk Assessment noted concern for a possible exposure route through privately owned wells. Public and semi-public wells are regulated and are required to be sampled periodically. Private well owners are not required to sample their wells, and may be at risk of exposure in the vicinity of this site.

If you are using a private well in the vicinity shown on the site map and would like information regarding well testing, please call the ADEQ Project Manager. If you receive a monthly billing statement from Tucson Water or another local water provider, you are not on a private well system.

Community Involvement Activities:

The City did involve the community throughout the remedial investigation/feasibility study process. However, if the RAP is significantly modified, additional public comment will be solicited.

In March 2001, ADEQ mailed a fact sheet to the site mailing area. The fact sheet provided site information and also gave an opportunity for the public to be added to the site mailing list.

Information Repositories:

Site information is available at both ADEQ's Southern Regional Office located at 400 W. Congress, Suite 433 in Tucson, and the main office located at 1110 W. Washington Street in Phoenix. Files are available for review Monday through Friday from 8:00 a.m. to 5:00 p.m. Please call (520) 628-6715 to arrange a file review appointment at the Southern Regional Office. To arrange for a time to review the site file at the main ADEQ office, please call the ADEQ Records Center (602) 771-4378 or (800) 234-5677 (Arizona toll-free).

Contacts:

Name	Phone/Fax	E-Mail
Silverbell Landfill Superfund (WQARF) Contacts		
Sherri Zendri, ADEQ Project Manager	(520) 770-3126*/ (520) 628-6745	zendri.sherri@azdeq.gov
Eileen Palese, ADEQ Community Involvement Coordinator	(520) 628-6712*/ (520) 628-6745	palese.eileen@azdeq.gov
ADEQ Kinder-Morgan Contact		
Tom Di Domizio, ADEQ Project Manager, Voluntary Remediation Program	(602) 771-4229*/ (602) 771-4272	didomizio.thomas@azdeq.gov

* In Arizona, but outside the Tucson area, call toll free (888) 271-9302.